

What is claimed is:

1. A communication system comprising a home network installed with a home agent for holding mobile terminal location information and, a visited network installed with a radio communications device for communicating with said mobile terminal, and gateway equipment in said host network for forming an interface with said home network, wherein  
5       said radio communication device contains an access request transfer means for forwarding access requests from a mobile terminal of said visited network to said gateway equipment, and  
10      said gateway equipment contains:  
an identifier request means for requesting an identifier for said mobile terminal from said home agent; and  
15      an identifier transfer means for forwarding said acquired identifier to said mobile terminal.
2. A communication system according to claim 1, wherein along with making an identifier acquisition request, said identifier request means also requests  
20     acquisition of DNS server information from said home agent, and  
      said identifier transfer means forwards the acquired DNS server information along with said identifier to said mobile terminal.

3. A communication system according to claim 1,  
comprising:

a decision means for deciding whether or not  
authentication processing of said mobile terminal is  
5 required, utilizing said source address of the access  
request from said mobile terminal moving in said host  
network; and

an authentication means for starting authentication  
processing of said mobile terminal when decided that  
10 authentication processing is required,

wherein said identifier request means makes a request  
to said home agent for acquisition of said mobile terminal  
identifier after said authentication is successful.

4. A communication system according to claim 3,  
15 wherein said gateway equipment comprises a location  
information holding means for holding location information  
on said mobile terminal in said visited network, and  
said authentication means starts said authentication  
processing after said location information holding means  
20 has received a location registration request from said  
mobile terminal.

5. A communication system according to claim 4,  
wherein said location information holding means holds  
location information on said mobile terminal after said  
25 authentication processing was successful.

6. A communication system according to claim 1,  
wherein said mobile terminal comprises:

an identification information creation means to  
acquire said identifier from said gateway equipment and  
5 create mobile terminal identification information; and  
a binding information registration means for  
registering information corresponding to a mobile terminal  
address created from said identifier and identification  
information of said mobile terminal, to a DNS server in a  
10 visited network, relay network or in a home network.

7. A communication system according to one of claim  
1, comprising network management equipment connected to  
said visited network and said visited network, wherein  
said home agent and said gateway equipment comprise  
15 an acquisition means for acquiring from said network  
management equipment, programs and data required for  
distributing identifiers and authenticating said mobile  
terminal.

8. A gateway equipment installed in a visited network  
20 containing a radio communications device for communicating  
with said mobile terminal, for forming an interface with the  
home network containing a home agent for holding location  
information on said mobile terminal, wherein said gateway  
equipment comprises:

an identifier acquisition request means for requesting acquisition of an identifier for said mobile terminal from said home agent in response to an access request from said mobile terminal in said visited network;

5 and

an identifier transfer means for forwarding said acquired identifier to said mobile terminal.

9. A gateway equipment according to claim 8, wherein  
said identifier request means makes an identifier  
10 acquisition request and a DNS server information  
acquisition request to said home agent, and  
said identifier transfer means forwards the acquired  
DNS server information along with said identifier to said  
mobile terminal.

15 10. A gateway equipment according to claim 8,  
comprising  
a decision means for deciding whether or not  
authentication processing using the source address for the  
access request from mobile terminal moving within said  
20 visited network is required; and  
an authentication means for starting authentication  
processing of said mobile terminal when decided that  
authentication is required,

wherein said identifier request means makes a request to said home agent to acquire the identifier of said mobile terminal, after said authentication was successful.

11. A gateway equipment according to claim 10  
5 comprising a location information holding means for holding aid mobile terminal location information, wherein  
said authentication means starts said authentication processing after receiving a location registration request from said mobile terminal for said location information  
10 holding means.

12. A gateway equipment according to claim 11,  
wherein said location information holding means holds said mobile terminal location information after said authentication was successful.

15 13. A communication method in a communication system comprising a home network installed with a home agent for holding mobile terminal location information and, a visited network installed with a radio communications device for communicating with said mobile terminal, and gateway  
20 equipment in said host network for forming an interface with said home network, wherein  
said radio communication device forwards an access request from said mobile terminal of said visited network to said gateway equipment, and

said gateway equipment makes an acquisition request to said home agent for an identifier for said mobile terminal, and forwards said acquired identifier to said mobile terminal, and

5       said mobile terminal creates mobile terminal identification information based on said identifier acquired from said gateway equipment, and searches said DNS terminal and forwards a packet addressed to said mobile terminal by registering mapping information along with said 10 mobile terminal address generated from said identifier and said mobile terminal identification information, in a DNS server within a relay network or home network.

14. A communication method according to claim 13, wherein said gateway equipment makes a DNS server 15 information acquisition request and identifier request to said home agent, and forwards said acquired DNS server information and said identifier to said mobile terminal.

15. A communication method according to claim 13, wherein said gateway equipment 20 decides whether or not authentication processing is required using the source address of the access request from said mobile terminal moving within said visited network; starts the authentication processing for the mobile terminal when decided that authentication is required; and

requests acquisition of an identifier for said mobile terminal from said home agent after the authentication was successful.

16. A communication method according to claim 15,  
5 wherein said gateway device

holds the location information of said mobile terminal in said visited network; and  
starts said authentication processing after receiving a location registration request from said mobile  
10 terminal.

17. A communication method according to claim 16,  
wherein said gateway device holds said mobile terminal location information after said authentication was successful.

15 18. A communication method according to claim 13,  
wherein said mobile terminal

acquires said identifier from said gateway device and creates identification information for said mobile terminal, and

20 registers mapping information with said mobile terminal address generated from said identifier and said mobile terminal identification information, in a DNS server within a home network, or a visited network or relay network.

19. A communication method according to claim 13, comprising a network management equipment connected to said home network and said visited network, wherein

5       said home agent and said gateway equipment acquire programs and data from said network management equipment required for distributing the identifiers and authenticating the mobile terminals.

20. An authentication method for a mobile terminal used in a communication system comprising a home network  
10      installed with a home agent for holding mobile terminal location information and, a visited network installed with a radio communications device for communicating with said mobile terminal, and gateway equipment in said visited network for forming an interface with said home network,  
15      wherein

      said radio communication device forwards an access request from said mobile terminal of said visited network to said gateway equipment, and

20      said gateway equipment makes an acquisition request to said home agent for an identifier for said mobile terminal, forwards said acquired identifier to said mobile terminal, and authenticates said mobile terminal.

21. An authentication method according to claim 20, wherein said gateway equipment

decides whether or not authentication processing is required using the source address of the access request from said mobile terminal moving within said visited network, and

5 performs authentication processing according to the method in claim 20, when decided that authentication is necessary.

22. An authentication method according to claim 21, wherein said gateway device

10 holds the location information of said mobile terminal in said visited network, and

performs authentication processing according to the method in claim 21 after receiving a location registration request from said mobile terminal.

23. An authentication method according to claim 11, 15 wherein said gateway device holds said mobile terminal location information after said authentication was successful.

24. An authentication method according to claim 20, wherein said mobile terminal

20 acquires said identifier from said gateway device and creates identification information for said mobile terminal, and

registers mapping information with said mobile terminal address generated from said identifier and said

mobile terminal identification information, in a DNS server within a home network, or a visited network or relay network.

25. An authentication method according to claim 20, comprising a network management equipment connected to said 5 home network and said visited network, wherein

    said home agent and said gateway equipment acquire programs and data from said network management equipment required for distributing the identifiers and authenticating the mobile terminals.